

Replacement Sheet

SPARSE AND EFFICIENT BLOCK FACTORIZATION FOR INTERACTION DATA

Francis X. Canning

Appl. No.: 10/619,796 Atty Docket: CANNING.001CP2

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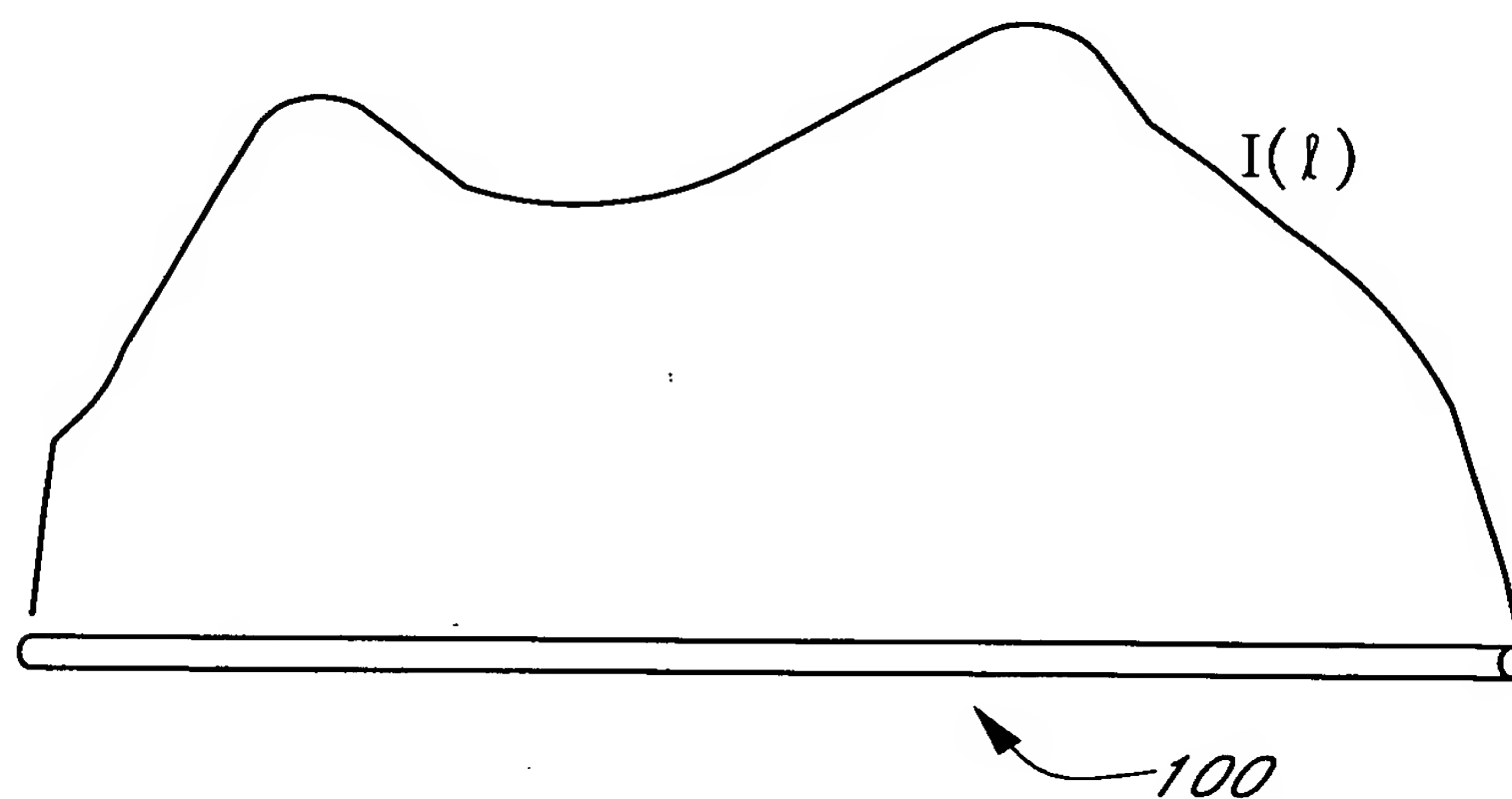


FIG. 1A
PRIOR ART

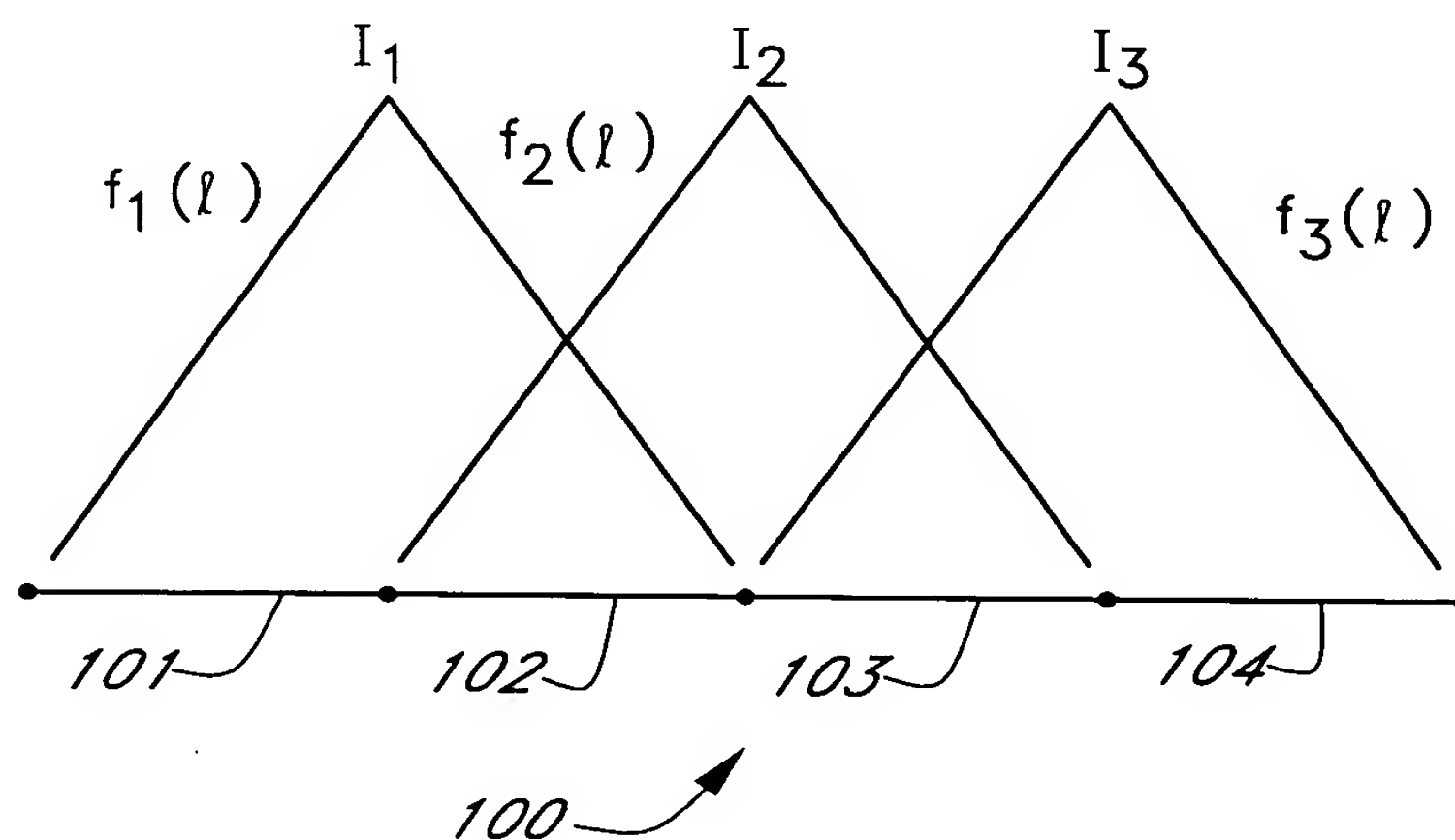


FIG. 1B
PRIOR ART

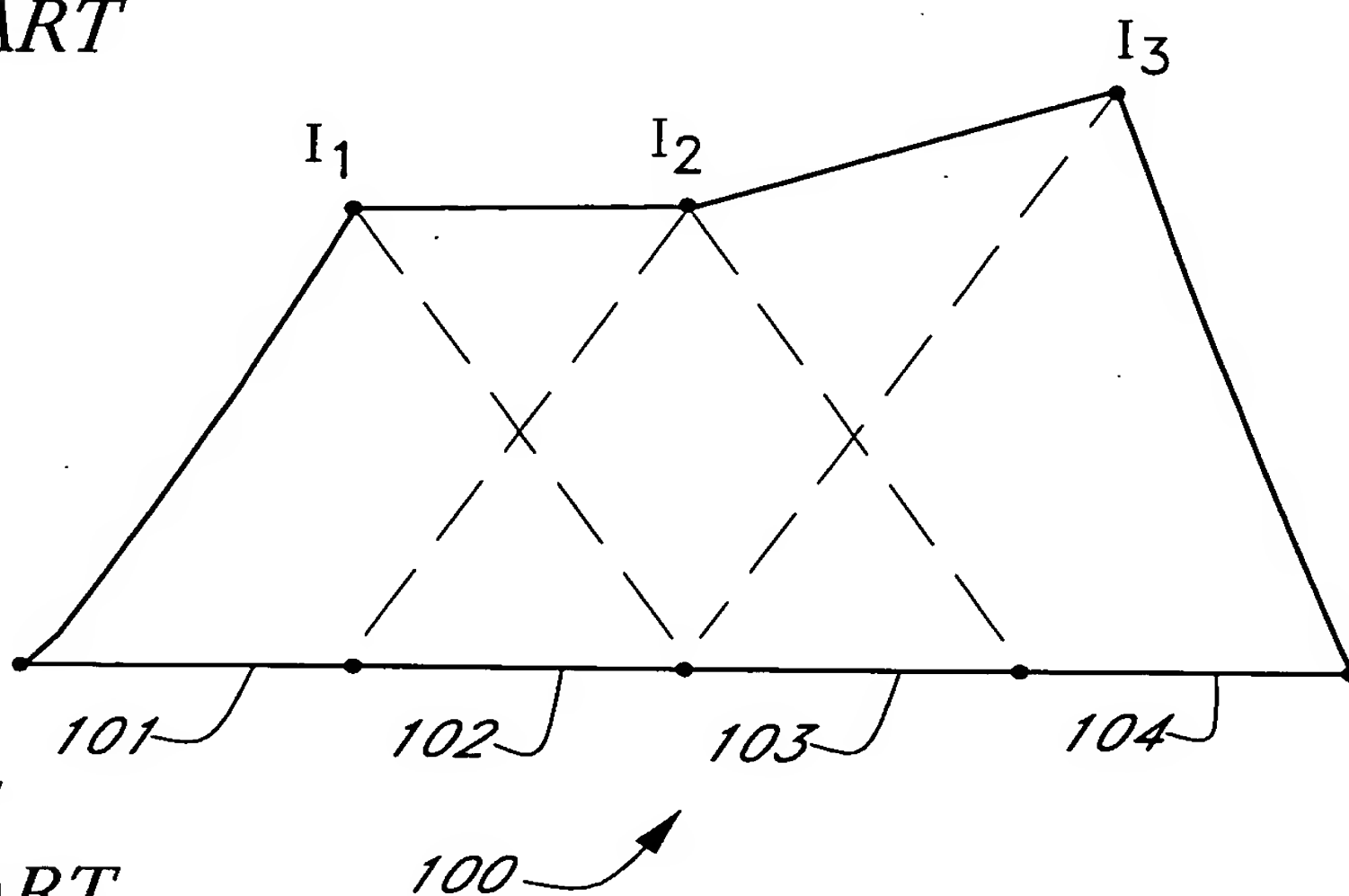


FIG. 1C
PRIOR ART

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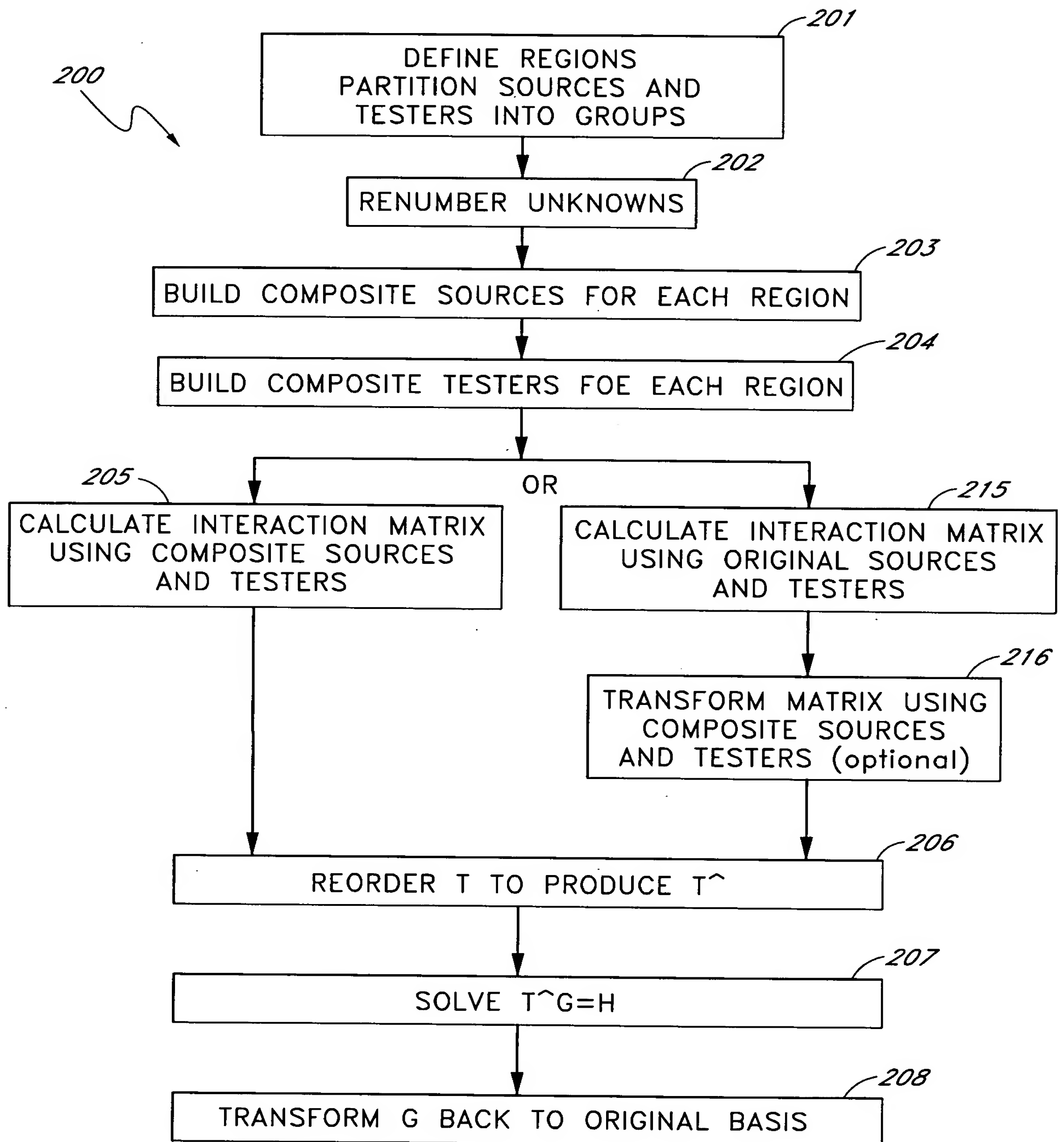


FIG. 2

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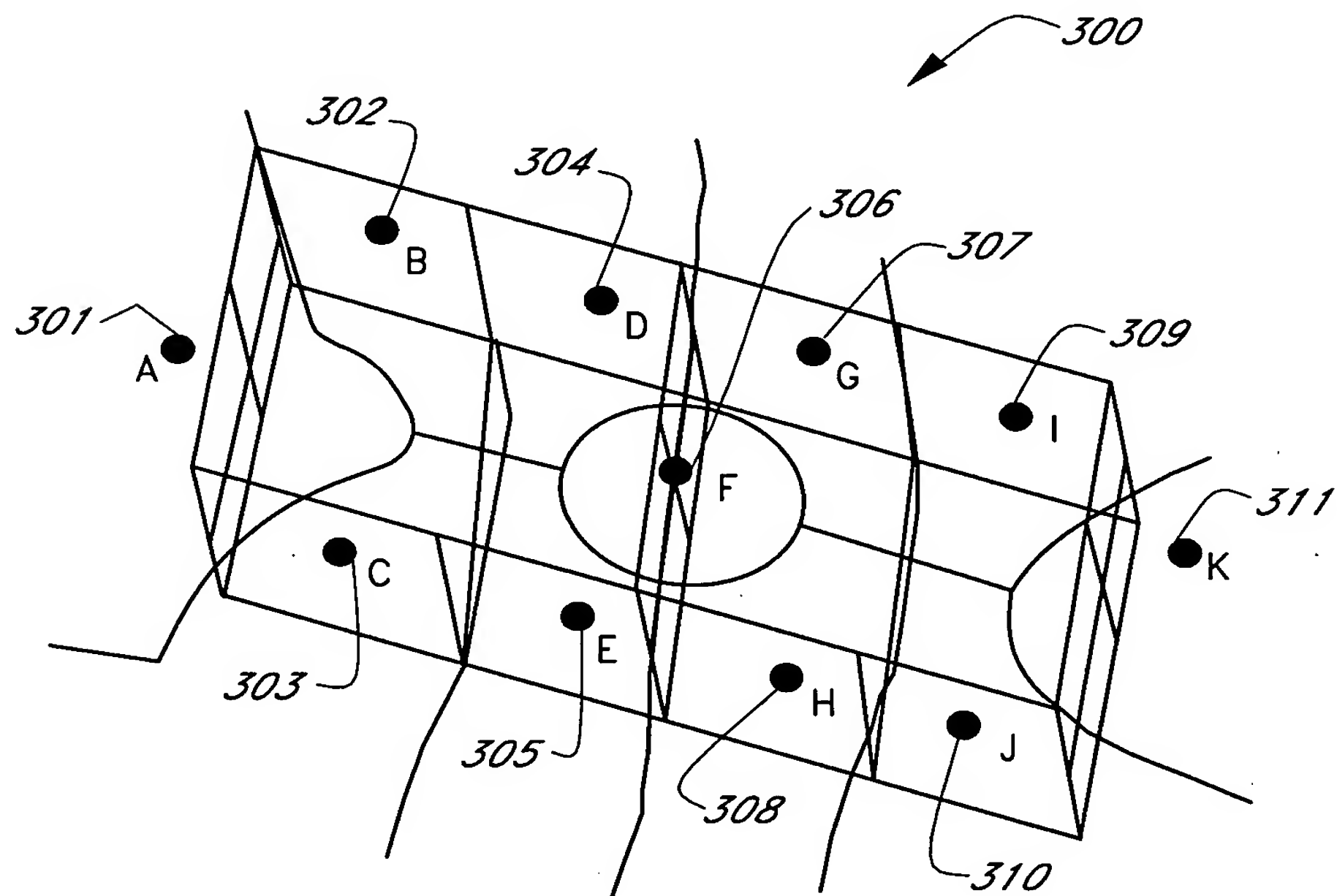


FIG. 3

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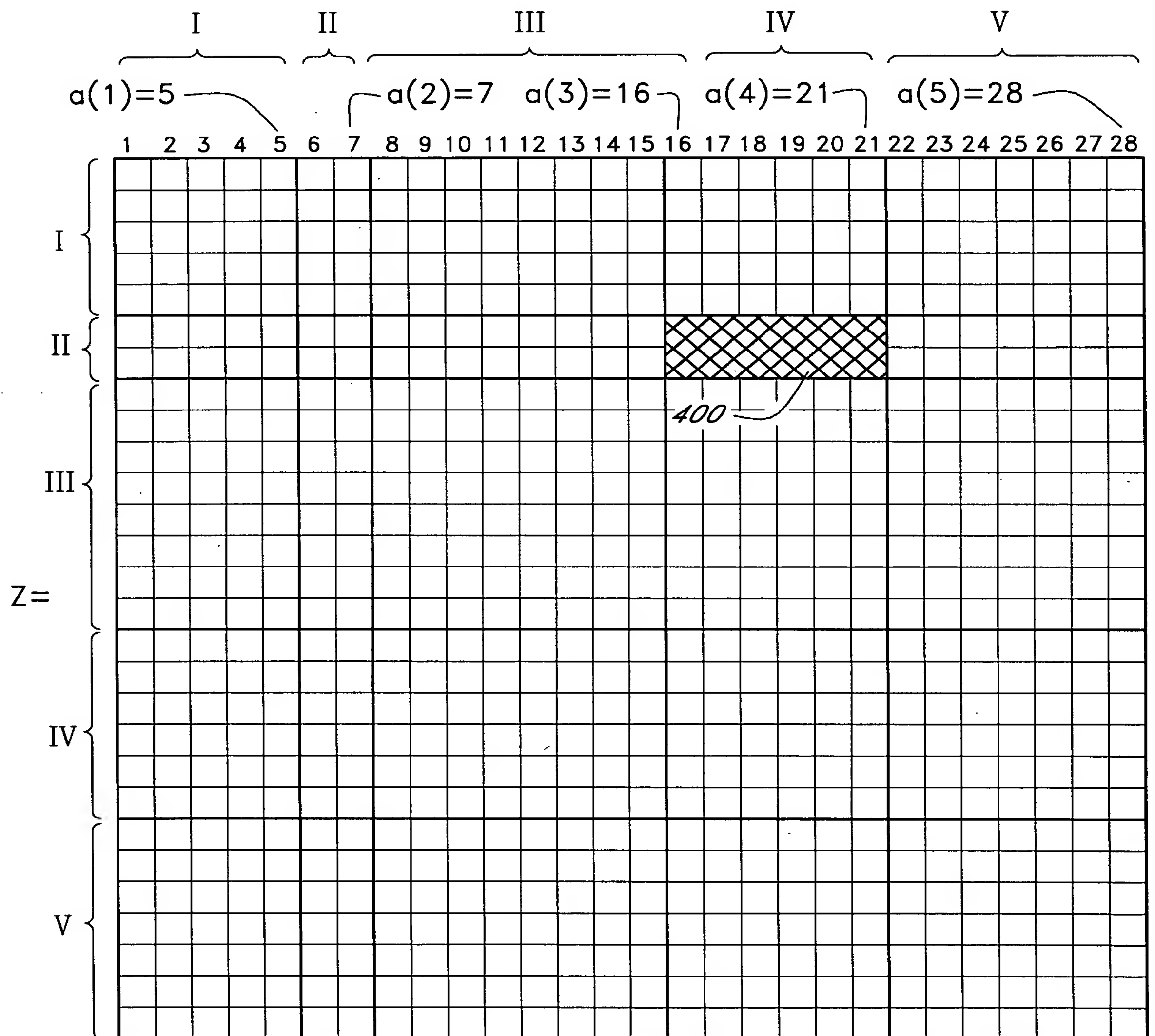
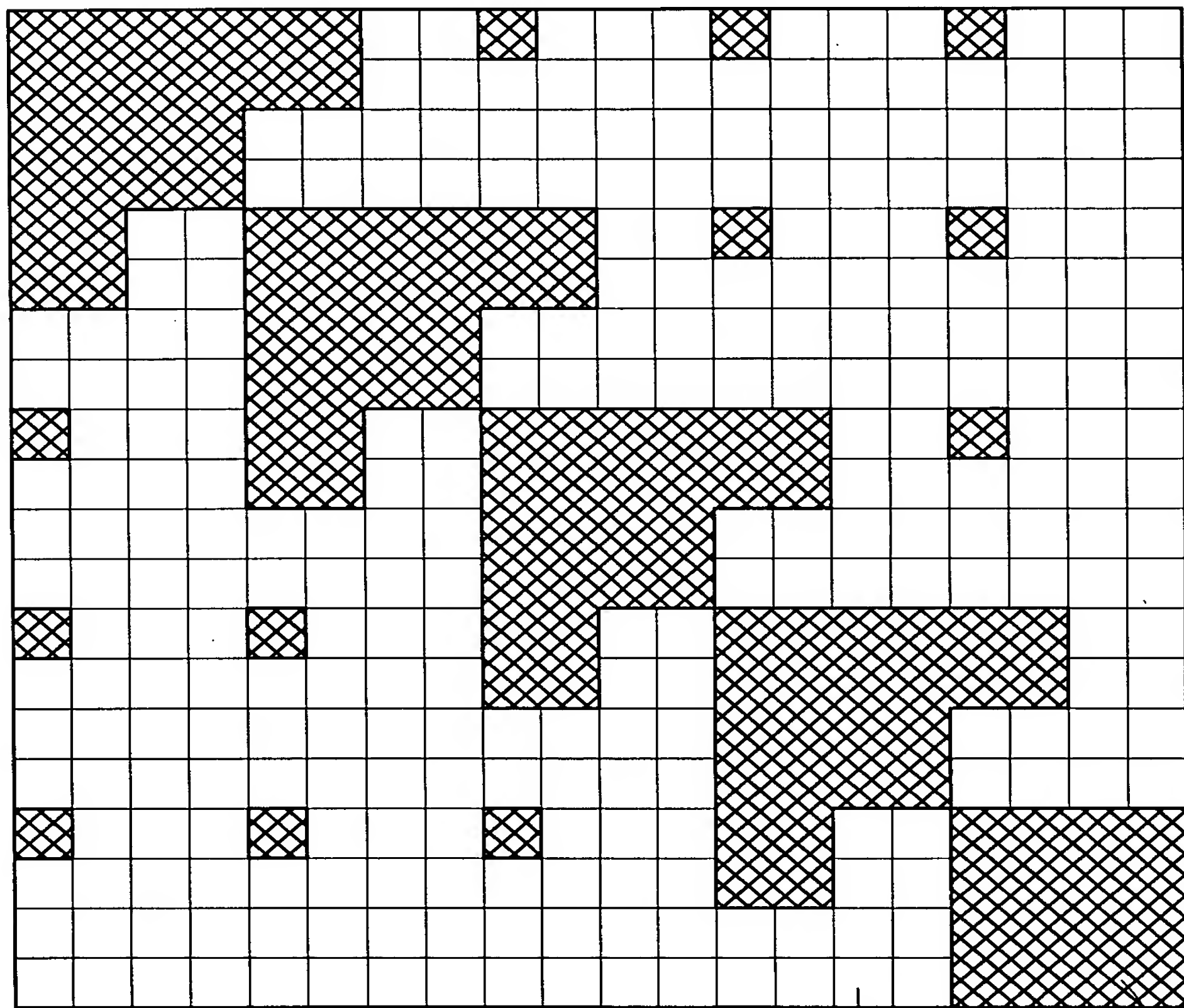


FIG. 4

400



500

FIG. 5

501

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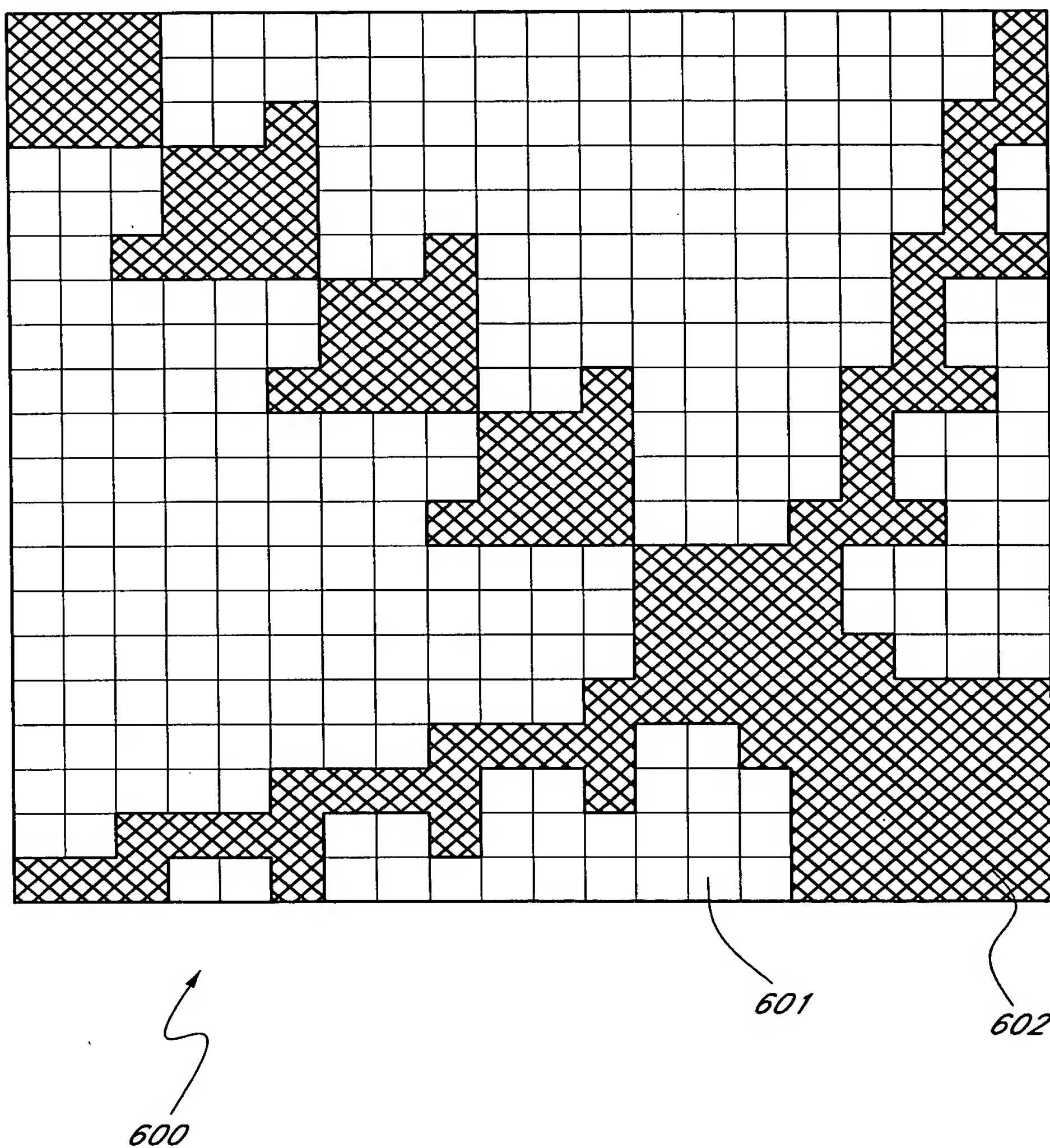


FIG. 6

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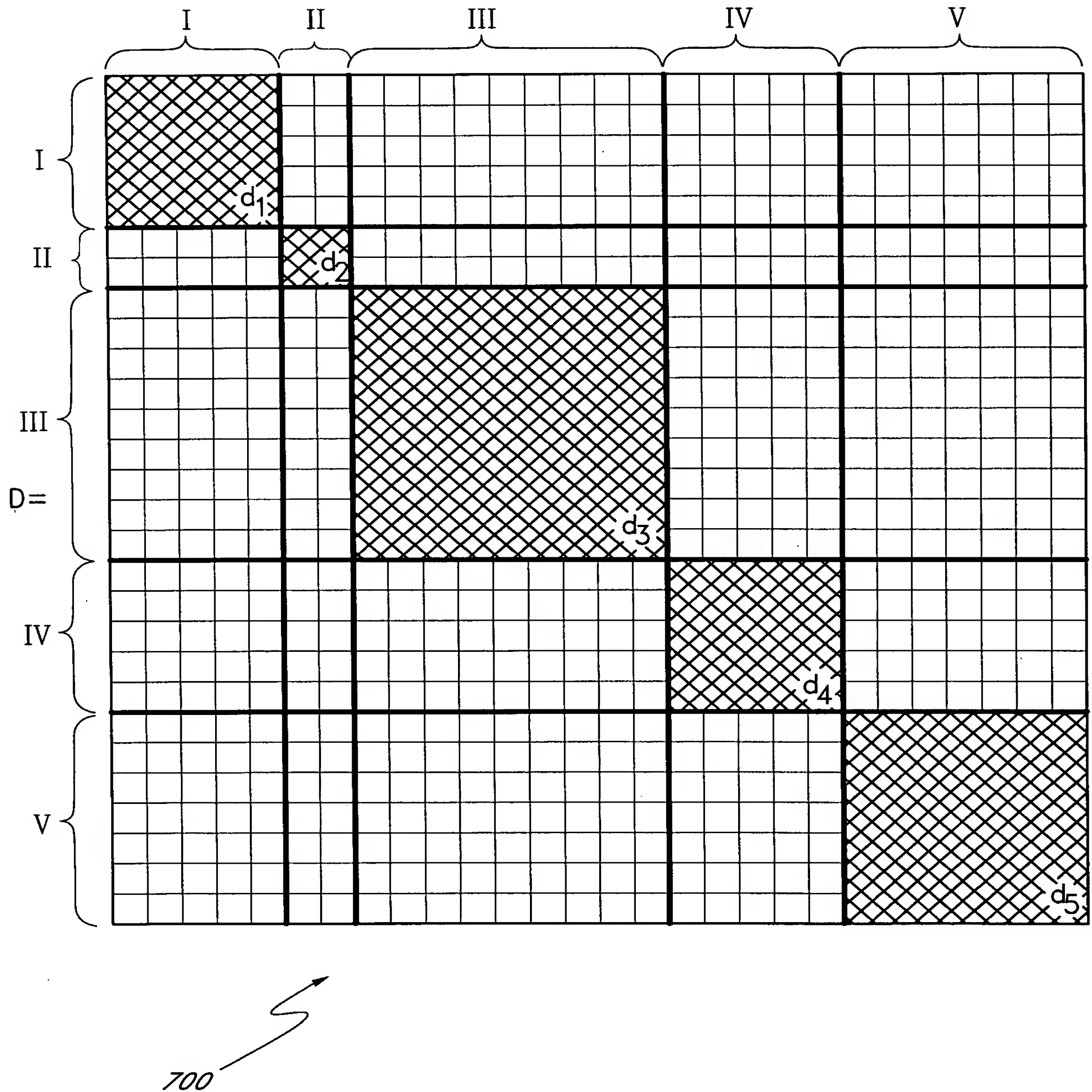


FIG. 7

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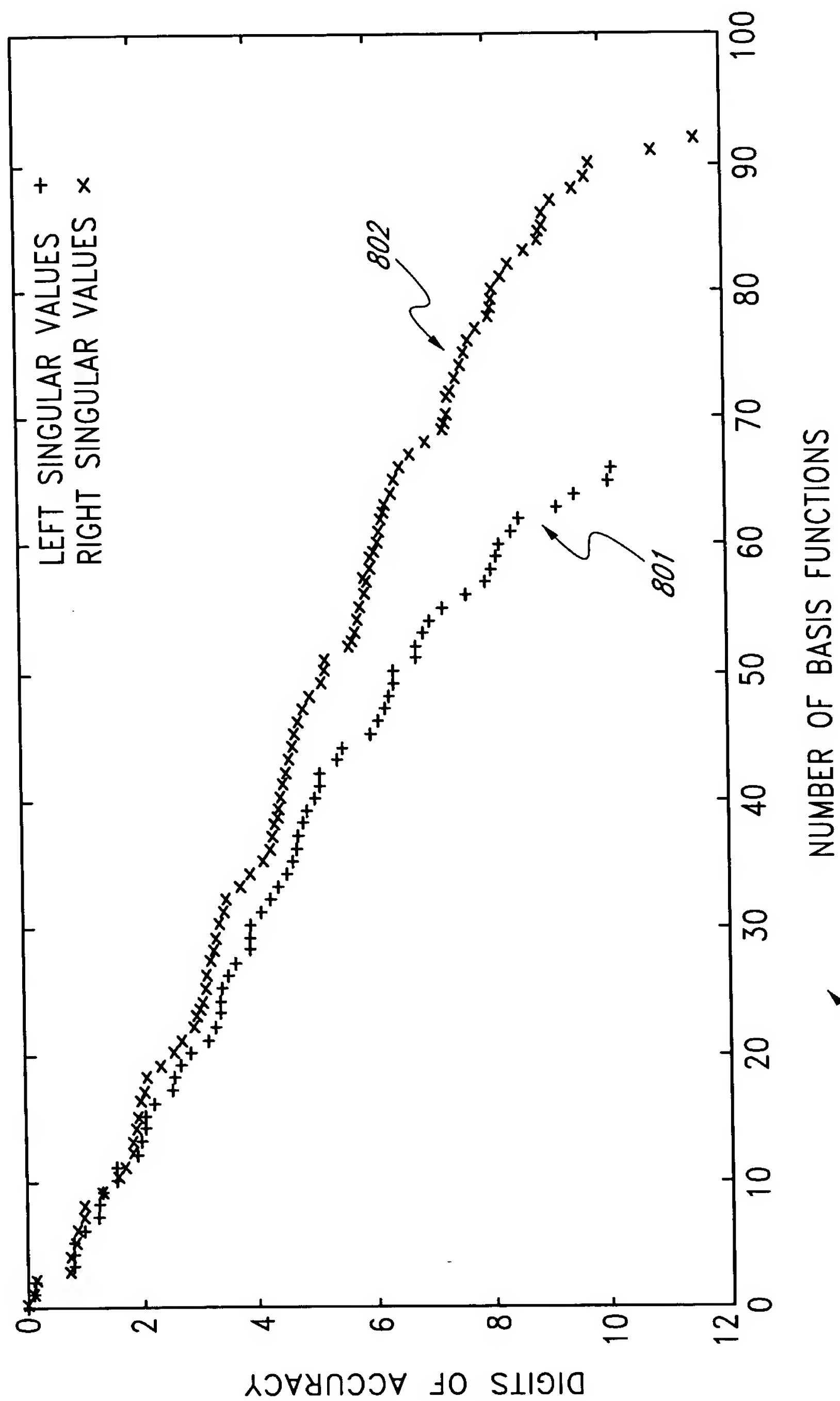
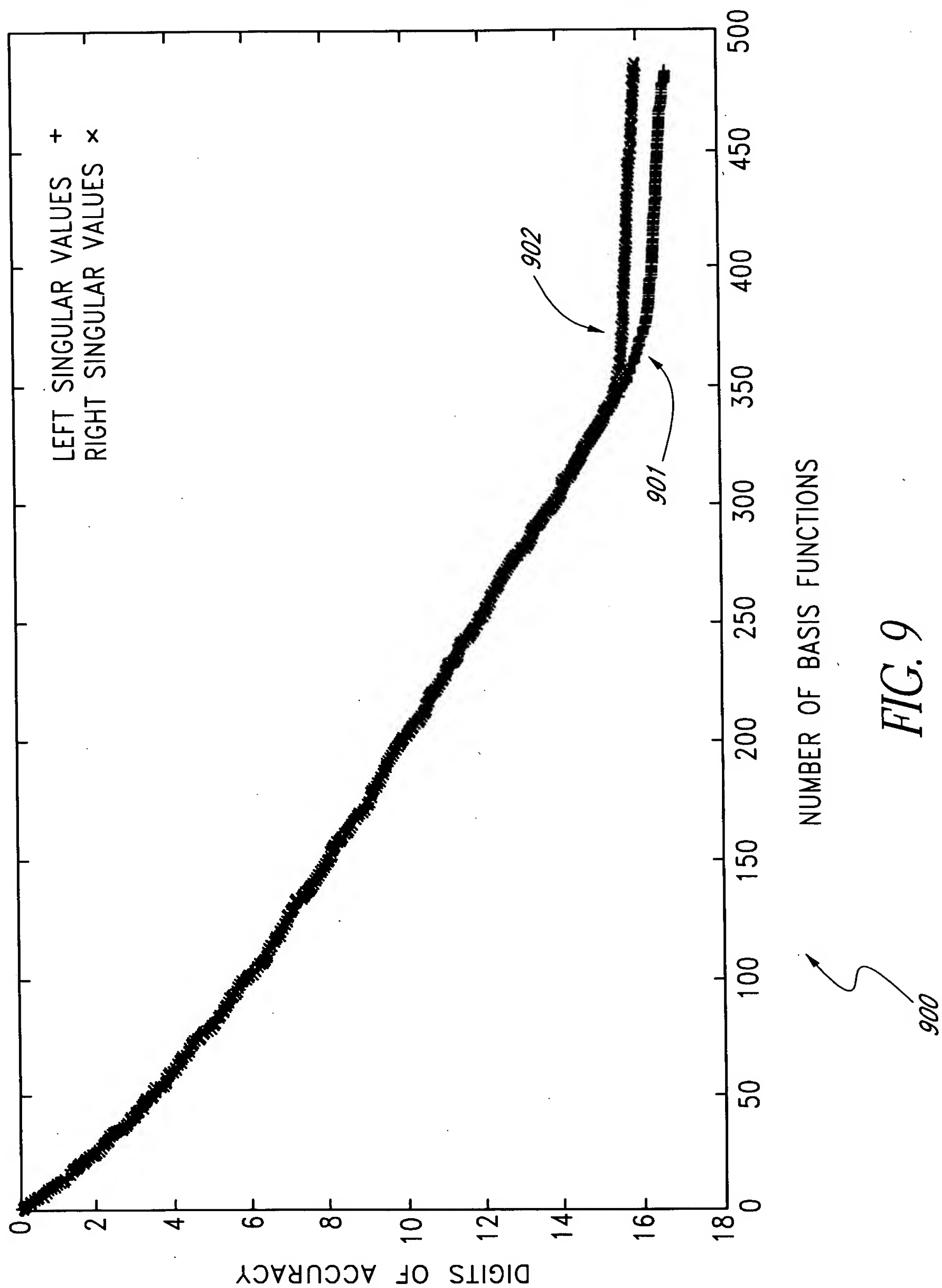
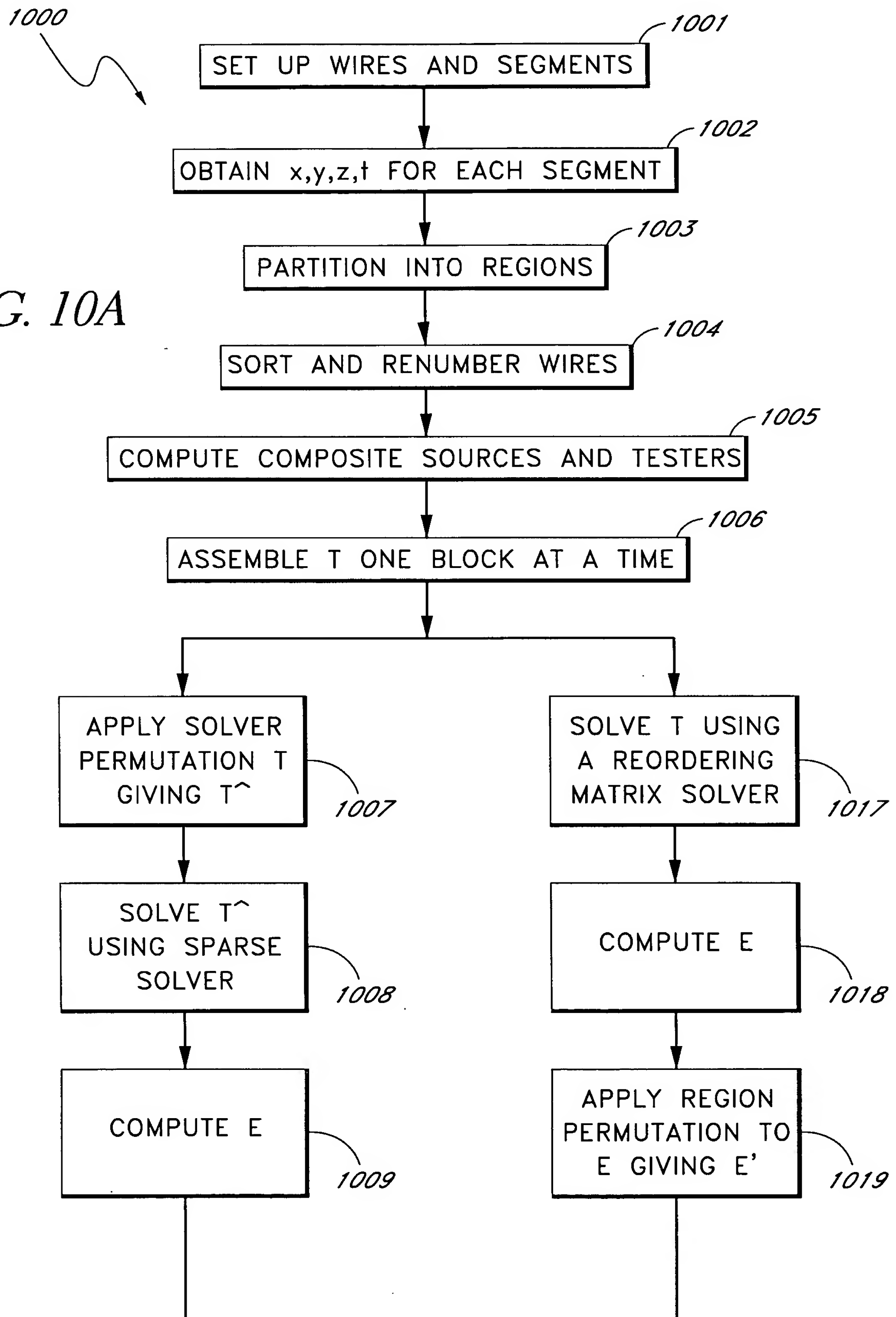


FIG. 8



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FIG. 10A



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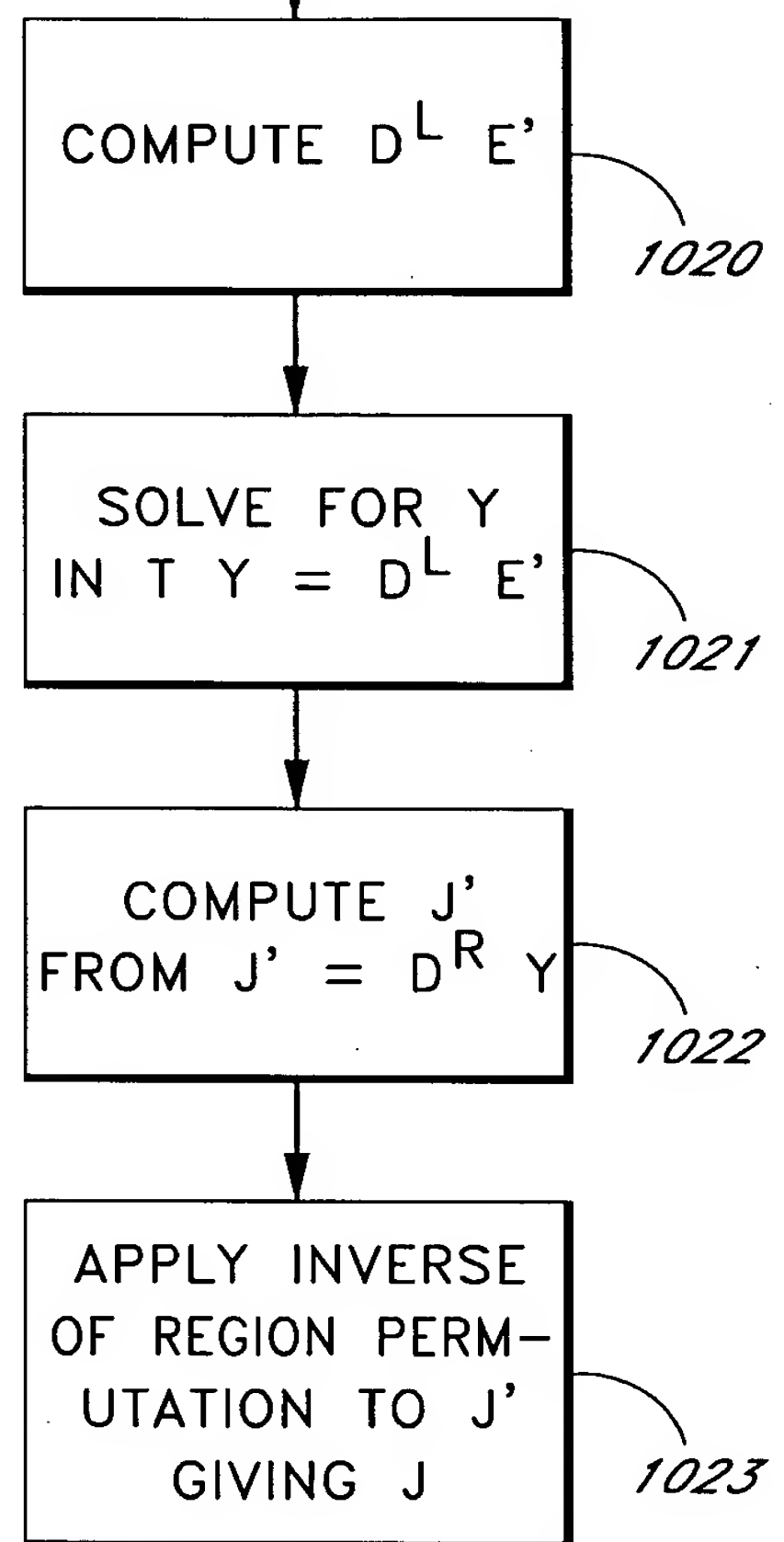
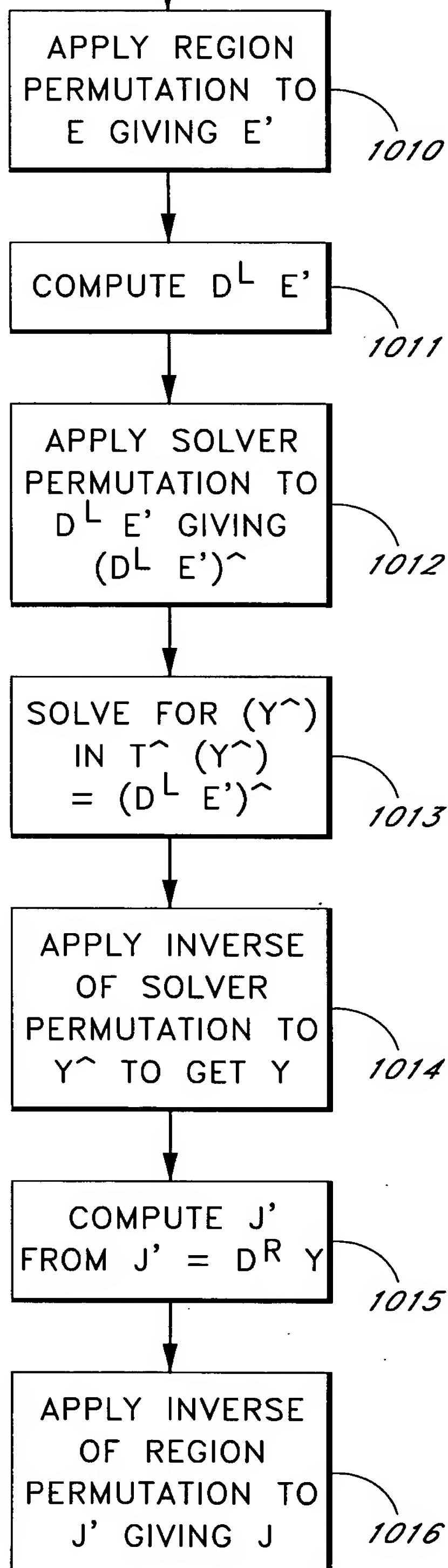
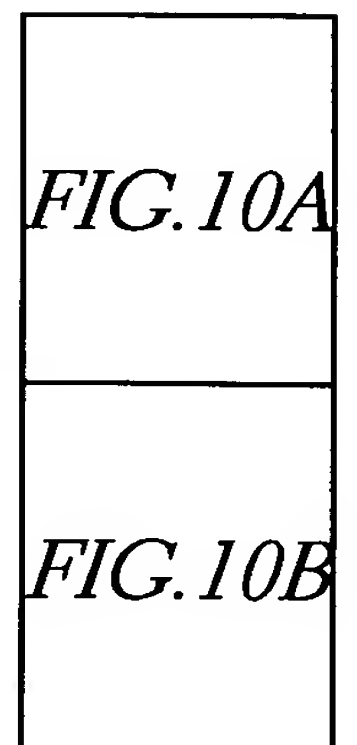


FIG. 10B

FIG. 10



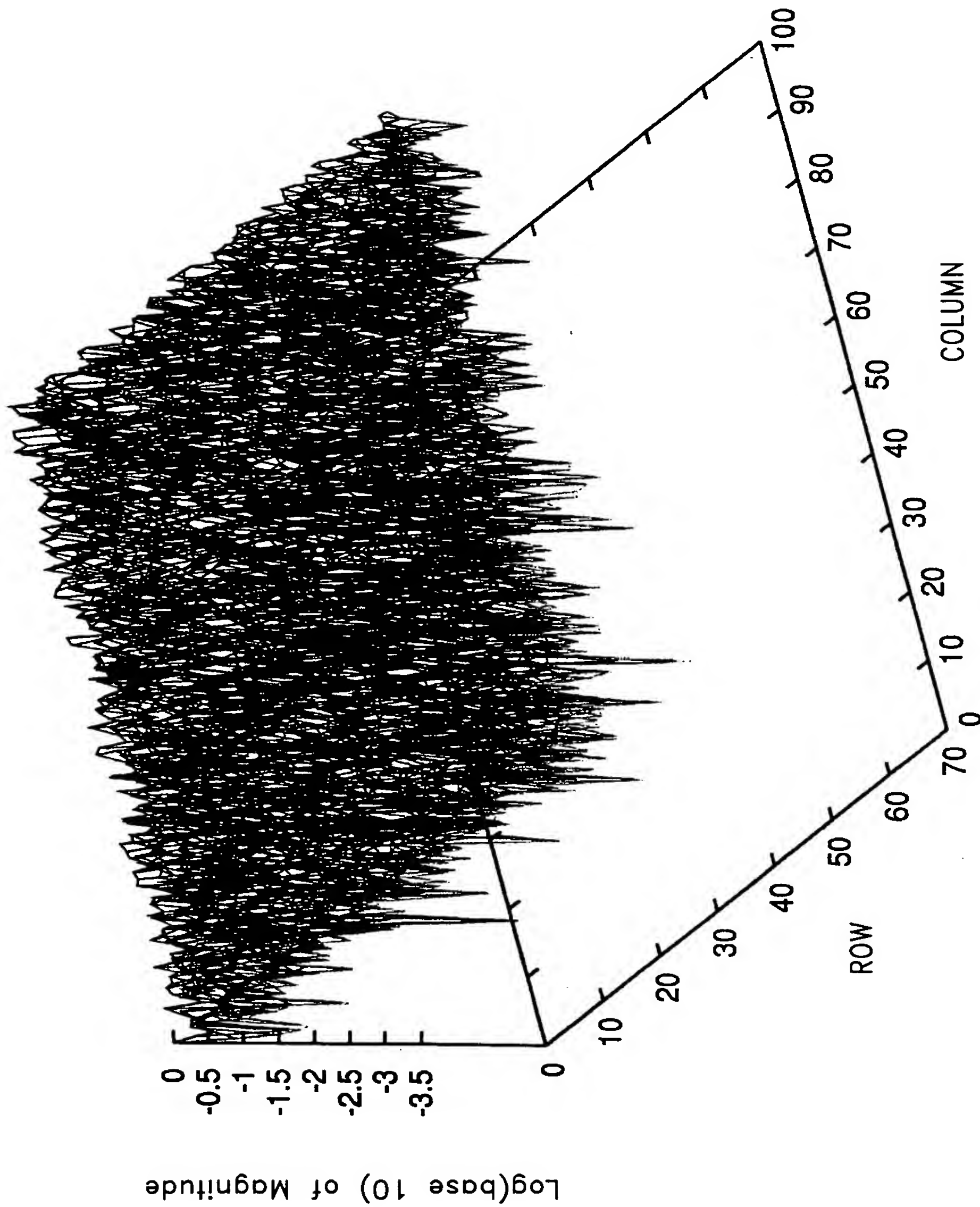


FIG. 11

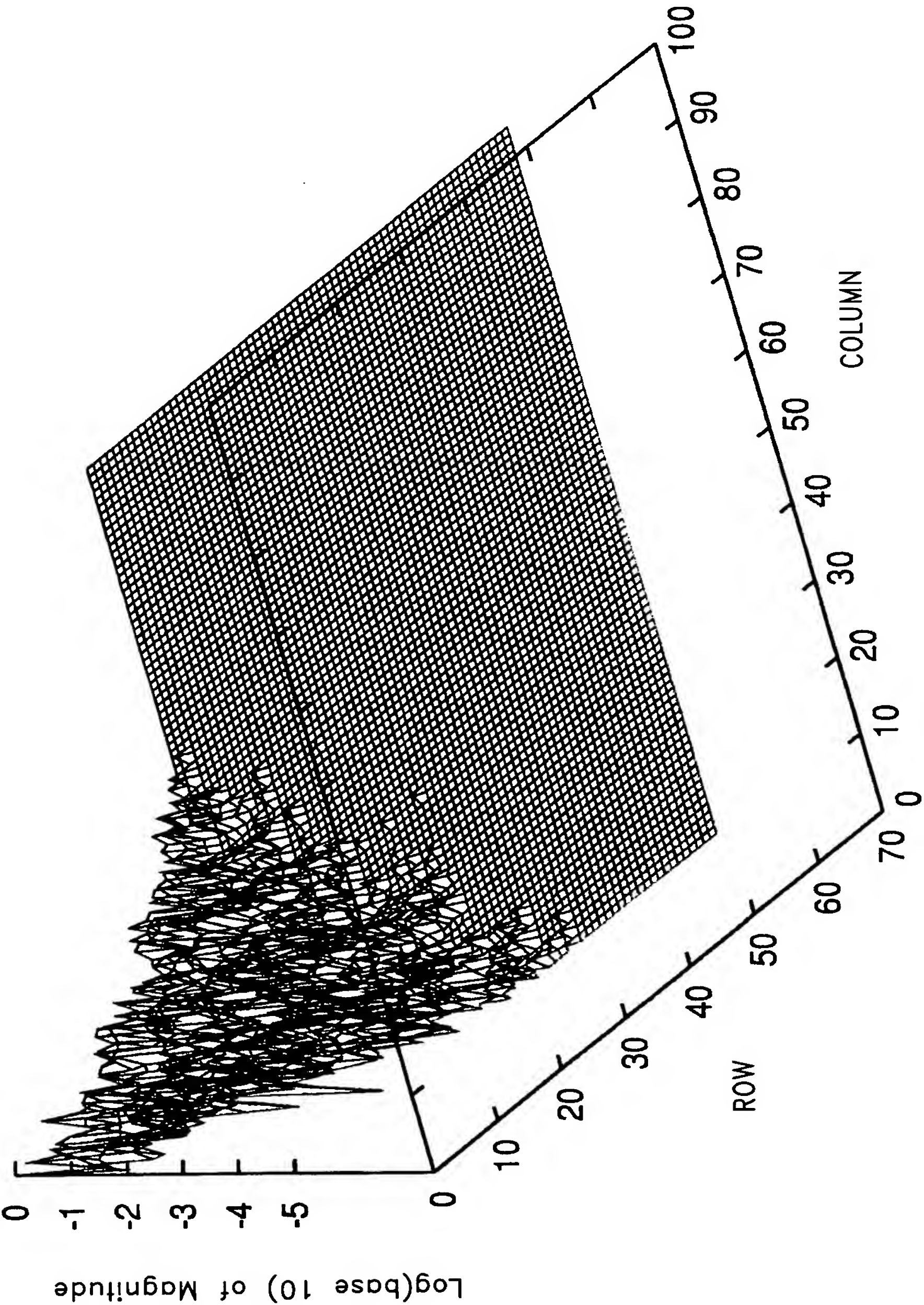


FIG.12

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$$\tilde{A}_{i,j} = \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array} \quad i > j$$

$$B_{i,j} = \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array} \quad i < j$$

$$B_{j,j}^{-1} = \blacksquare$$

$$A_{i,j} = \tilde{A}_{i,j} B_{j,j}^{-1} : \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array} \blacksquare = \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array}$$

$$A_{i,k} B_{k,j} : \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array} \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array} = \begin{array}{|c|} \hline \blacksquare \\ \hline \end{array}$$

$i < k \quad k < j$

FIG. 13

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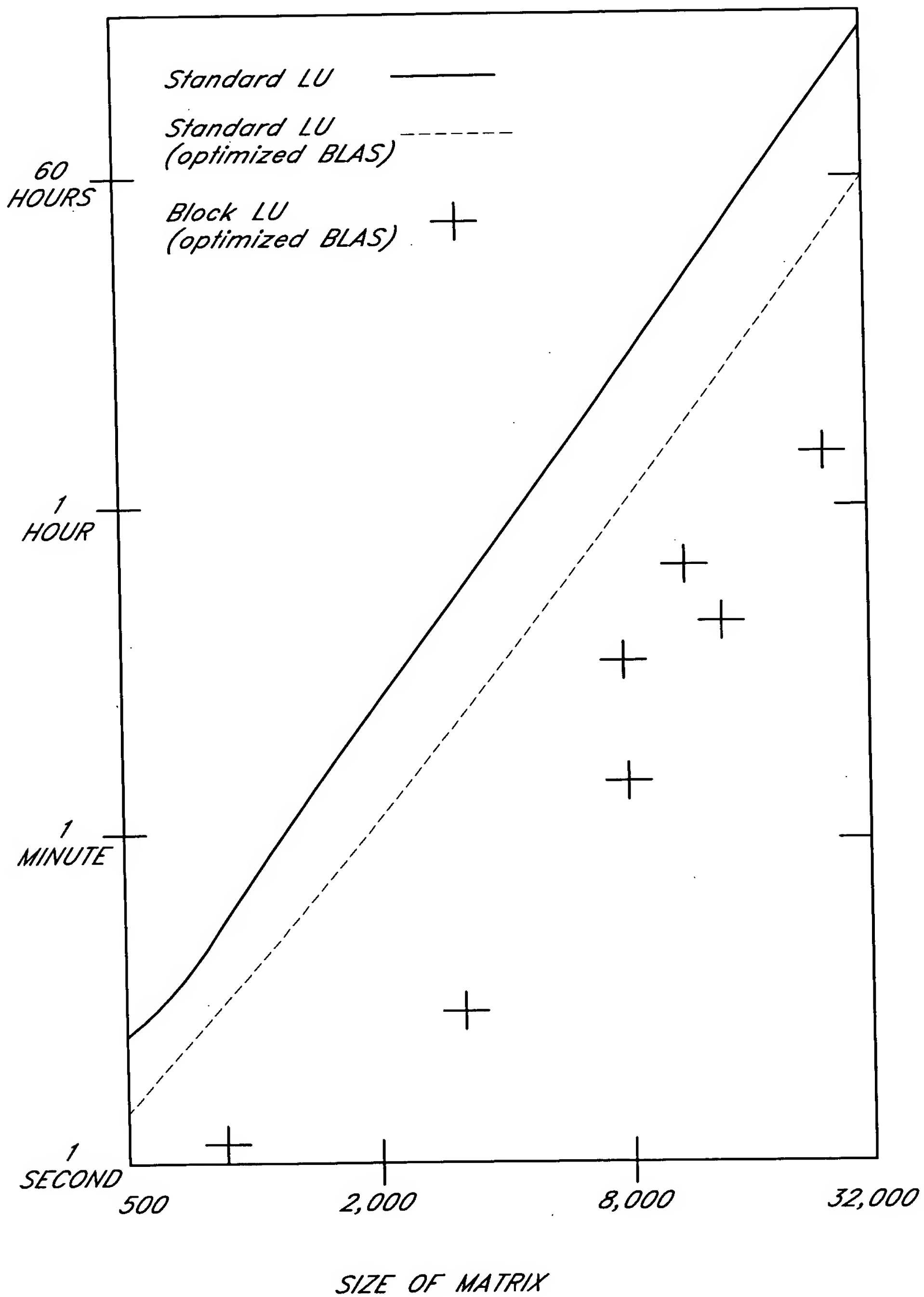


FIG. 14